

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C.

and

UNIVERSITY OF TENNESSEE AGRESEARCH
KNOXVILLE, TN

**NOTICE OF RELEASE OF SOYBEAN GERMPLASM LINE SB-01 WITH NOVEL
ALLELES FOR OMEGA-3 FATTY ACID DESATURASE**

The Agricultural Research Service, U.S. Department of Agriculture and University of Tennessee AgResearch announce the release of soybean [*Glycine max* (L.) Merr.] germplasm line SB-01. The principal scientists participating in the development of SB-01 were Drs. Kristin Bilyeu (USDA-ARS, Columbia, MO) and Vince Pantalone, (University of Tennessee, Knoxville, TN).

SB-01 (previously designated as line 10-73#5) is an F5-derived selection from Williams 82 x (Pana x CX1512-44). CX1512-44 is a low linolenic acid mutant identified by Dr. Jim Wilcox (retired, USDA-ARS, West Lafayette, IN). SB-01 contains the two publicly available novel desaturase alleles discovered in CX1512-44 and designated as the gene mutations FAD3A and FAD3C that together produce less than 3 percent linolenic acid (18:3). Detection of these novel alleles enabled selection based on perfect molecular markers of soybean microsomal omega-3 fatty acid desaturase genes. As a consequence, breeders can utilize SB-01 germplasm along with the perfect molecular markers to accelerate trait introgression to elite lines to serve the low trans fat food products industry.

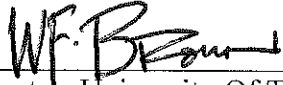
SB-01 was tested in the 2008 Preliminary Test IIIA of the Northern Uniform Testing Program, with yield data obtained over eight environments. SB-01 matured 3.4 days later, reached a height 15 cm taller, and produced seed that was 0.9 g/100 smaller than IA3023. Lodging resistance and seed protein and oil concentrations of SB-01 were similar to those of IA3023. Seed yield of SB-01 (3,057 kg ha⁻¹) was approximately 77 percent that of IA3023 (3,984 kg ha⁻¹).

SB-01 was also tested in the 2008 Regional Quality Traits Test with data obtained from twelve environments. In that test, SB-01 averaged 3,111 kg ha⁻¹ seed yield, which was 81 percent that of the three check cultivars (IA3023, IA3024, and Macon). Seed linolenic acid concentration of SB-01 (2.4 percent) was only about a third that of Macon (7.0percent). SB-01 produced 33.5 percent seed protein and 19.9 percent seed oil (on a 13 percent moisture basis). SB-01 produced a soy meal with 47.7 percent protein.

SB-01 is an early maturity group IV line (RM 4.0) with white flowers, tawny pubescence, tan pod color, dull seed coat luster, yellow seed coat color, black hila, and an indeterminate stem termination type.

A limited quantity of seed is available from Dr. Kristin Bilyeu (USDA-ARS, Columbia, MO). Seed of this release will be deposited in the National Plant Germplasm System where it will be available for research purposes, including development and commercialization of new cultivars. It is requested that appropriate recognition be made if this germplasm line contributes to the development of new germplasm and cultivars.

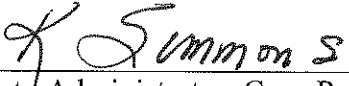
Signatures:



Director, University Of Tennessee AgResearch



Date



Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture



Date